Claims 1, 2, 4, 9, and 10 have been rejected under 35 U.S.C. § 102(b) as anticipated by the Japanese patent publication to Shigeki et al. (JP03294821). Also, claim 11 has been rejected as unpatentable under 35 U.S.C. § 103(a) based on this same publication. Both rejections are respectfully traversed.

In the first paragraph of page 4 of the detailed Action, the Examiner states that Shigeki et al. discloses that the twist angle of the twisted phase difference board is about 200 degrees and the twist angle of the liquid crystal devices is about 230 degrees, and therefore, the twist angle of the twisted phase difference board is smaller than the twist angle of the liquid crystal devices by 30 degrees, which is in a range of 10 to 40 degrees.

It does not appear from the Abstract of Shigeki et al. or from its Table 3 that, in a liquid crystal display as claimed, there is any teaching of having a difference between the twist angles of a phase compensating board and an STN liquid crystal cell. If the Examiner is relying upon a translation of Shigeki et al. for his assertions, he is requested to provide applicants with a copy. Otherwise, he is requested to withdraw the rejections based on this publication.

Applicants have attached as Appendix B a partial translation of Shigeki et al. as a courtesy to the Examiner. This translation was provided to the undersigned attorney by applicants and is being submitted to the Examiner with the caveat it is not a certified translation. If the Examiner questions the accuracy of any part of this translation, he is requested to so inform applicants and provide applicants with a copy of a translation with which he is in agreement.

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With reference to Appendix B, Shigeki et al. discloses, in Part A of the specification, a liquid crystal display of the so-called double layer cell system type which requires that the twist angle of a phase compensation liquid crystal layer be reverse to that of an STN liquid crystal cell. Further, Shigeki et al. discloses in Part B of the translation that the compensating boards having twist angles as shown in Table 3 were laminated respectively on an STN liquid crystal cell having optical parameters which match those of the compensating boards, in order to detect their color compensating effect. Taking into account the basic relationship between the aforementioned twist angles of a phase compensation liquid crystal layer and an STN liquid crystal cell, the above description in Shigeki et al. can be considered to imply that an absolute value of the twist angle, which is one of the optical parameters, of the STN liquid crystal cell should be equal to that of the compensating board.

It is submitted that this implication is supported in the translation at the beginning of Part B, where it discloses that in the embodiment of Fig. 1, the twist angle of the compensating board is -230 degrees while that of the STN liquid crystal cell is 230 degrees. From the above, it is not difficult to presume that, when a compensation board is used having a twist angle of 200 degrees, as shown in Example 3 of Table 3, an STN liquid crystal cell having the twist angle of -200 degrees would be selected to form a liquid crystal device having a good white and black display characteristic. Contrary to this, if an STN liquid crystal cell having a twist angle of -230 degrees is selected to laminate with a phase compensation board having a twist angle of 200 degrees, as stated by the Examiner, it is submitted a liquid crystal device having the good white and black display characteristic sought by Shigeki et al. would not be obtained. Therefore,

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the Examiner's combination of such twist angles would not appear to be in line with the teachings of Shigeki et al. In contrast, the present invention positively sets a difference between twist angles of a phase compensating board and an STN liquid crystal cell, thus obtaining an excellent color compensating effect.

As to the rejection of claims 9, 10, and 11, it seems apparent from the attached translation that the "heat processing condition (°C x min)" in Table 3 of Shigeki et al. refers to a burn-in condition to fabricate a phase compensation board, not a temperature compensating characteristic of a twisted phase difference board. Accordingly, the Examiner's rejection of claims 9, 10, and 11 should also be withdrawn.

Applicants respectfully request reconsideration and allowance of all pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
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Dated: April 8, 2003

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PATENT
Customer No. 22,852
Attorney Docket No. 01165.0781

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	
Yasushi KANEKO et al.	Group Art Unit: 2871
Application No.: 09/530,008	Examiner: H. C. Nguyen
Filed: April 24, 2000	
For: LIQUID CRYSTAL DISPLAY AND METHOD FOR MANUFACTURING THE SAME	

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

APPENDIX A TO AMENDMENT FILED APRIL 8, 2003

IN THE SPECIFICATION:

Page 4, please amend the 3rd paragraph as follows:

Still further, preferably, the direction of the preferential view angle of the liquid crystal device is set to any one direction, with reference to [of the hands of] a clock [showing] face, at two-thirty, four-thirty, seven-thirty, or ten-thirty o'clock.

Page 23, line 21, please add the following new paragraph:

In the present invention, the preferential viewing angle of the liquid crystal device by an observer can be any one of the following positions, based upon the convention of the face of a clock: two-thirty, four-thirty, seven-thirty, or ten-thirty, as shown in Fig. 21(5) o'clock.

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APPENDIX B

Partial Translation of JPA 3-294821

Part A

In order to convert a coloring mode to a white and black mode, a so-called double layer cell system has been put to use in practical use. The double layer cell system is formed by placing, on an STN liquid crystal cell originally used for displaying, a layer of a liquid crystal cell for compensation, which cell has a cell gap having the same thickness as that of the STN liquid crystal cell and a twist angle reverse to that of the STN liquid crystal cell.

Part B

The twist angle of this compensating board was -230 degrees, and its Δn·d was 0.83μm. According to the arrangement shown in Fig. 1, this compensating board was laminated on a multiplex driving STN liquid crystal cell having a twist angle of 230 degrees, Δn·d of 0.87μm and duty ratio of 1/200, and then, a polarization board was stacked thereon to form a cell. In this case, the direction of the upper and the lower polarization boards, the rubbing directions of the upper and the lower electrode substrates, and the orientation direction of molecules of the compensating board were the same as those of shown in Fig. 2. The angle between the polarization axes of the upper and the lower polarization boards was 90 degrees, the angle between the rubbing directions of the upper and the lower polarization boards was 45 degrees, the angle between the rubbing directions of the upper electrode substrate and the compensating board was 90 degrees, and the angle between th orientation direction of molecules on a surface contacting with the upper polarization board of the compensating layer and the transmission axis of the upper polarization board was

45 degre s. The display formed of this liquid crystal cell was substantially a white and black display having reduced unequality of colors.

Embodiments 2 - 8 and Embodiments 11 and 12

Using a melt poly condensation method and an acid chloride method, polyesters having characteristics shown in table 1 were synthesized. Using these polymers and, optically active compounds and composition ratios shown in table 2, compensating boards were formed on the substrates defined in table 2. Heat treatments for producing the compensating boards were carried out under the conditions shown in table 3. The twist angle, $\Delta n \cdot d$ and the deviation range of $\Delta n \cdot d$ of the compensating boards obtained were those as shown in table 3. The respective compensating board was laminated on an STN liquid crystal cell having optical parameters which match to those of the compensating board in order to detect their color compensating effect. All of the compensating boards of the embodiments showed good color compensating effect, and substantially complete white and black displays having reduced unequality of colors were obtained.